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(56) Documents Cited

EP 0816552 A2 EP 0324539 A1 WO 97/47798 A1
US 5370006 A US 5305484 A US 5094020 A
US 3594917 A

(58) Field of Search

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(54) Abstract Title

Steam device for clothes

(57) A steam device (1) for clothes (5) or the like comprises a steam generating part (7), a clothes container part (3) for receiving clothes and the like and means (29) for connecting the steam generating part to the container part. Part (7) contains water heated by electrical means and there is a thermostat and a timer. The container is foldable.

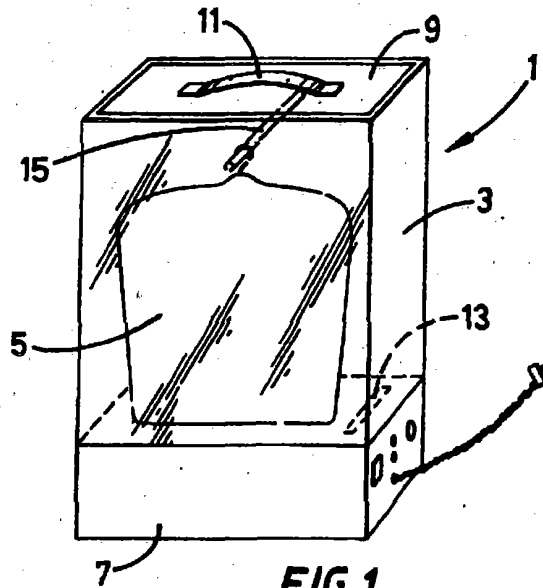
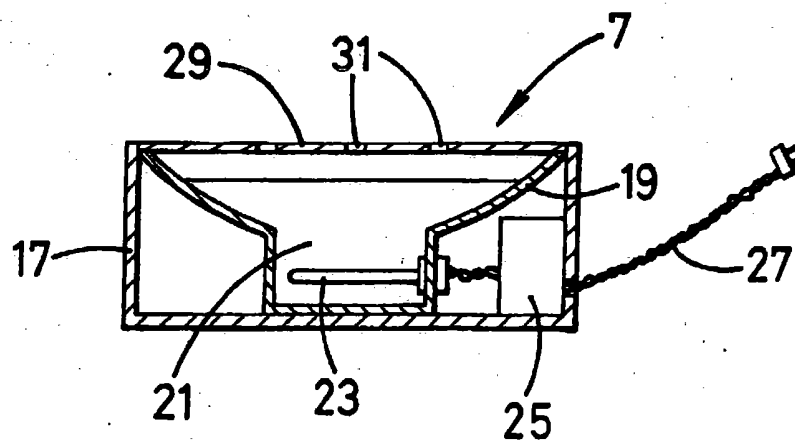
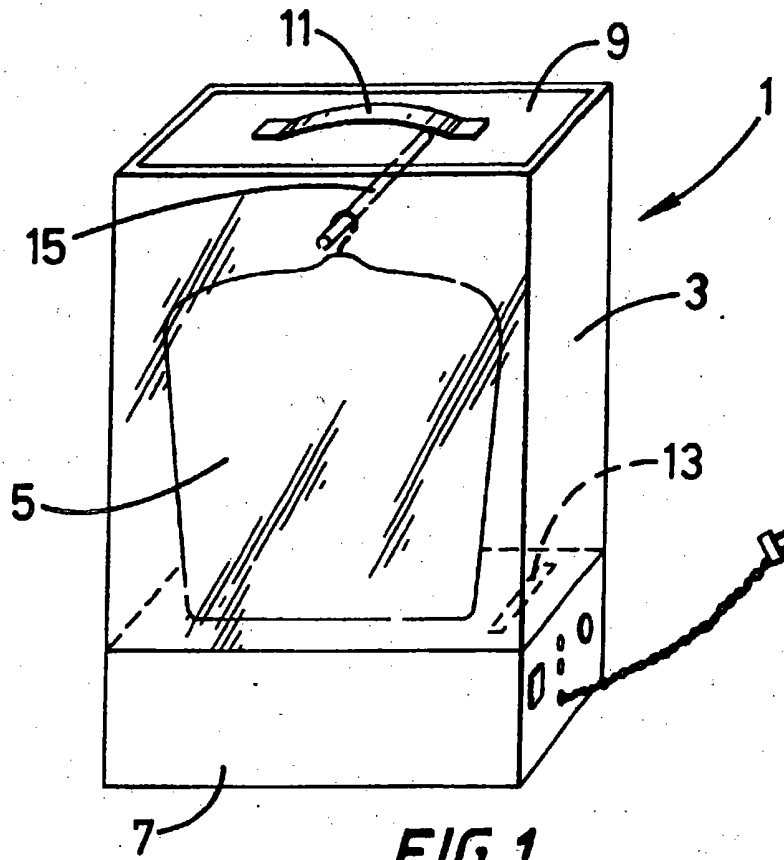


FIG. 1

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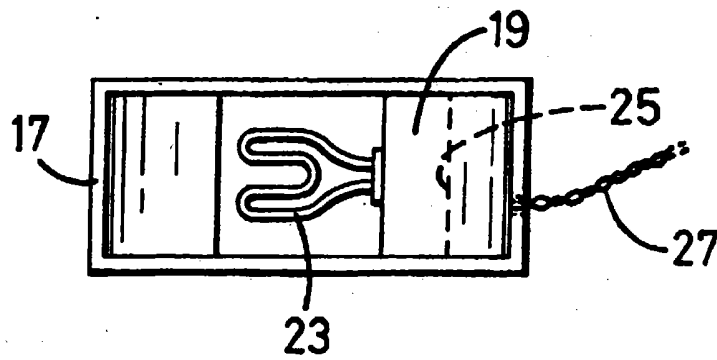


FIG. 3

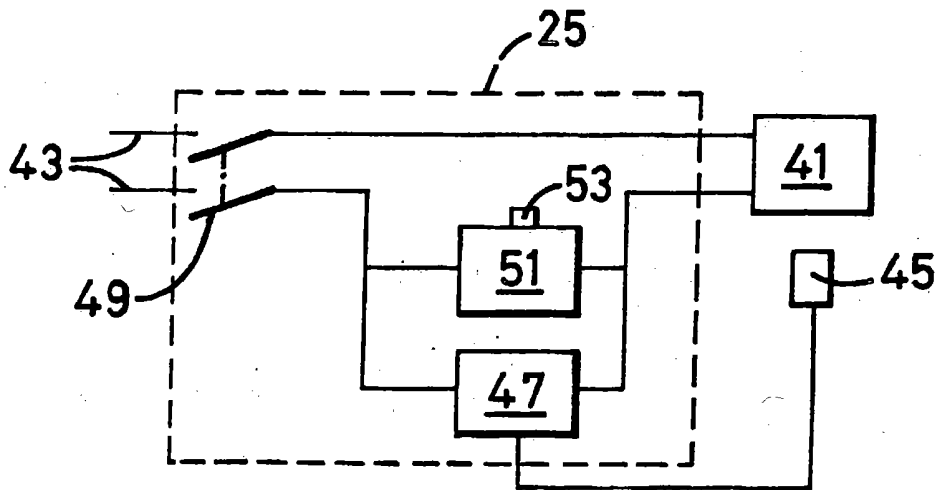


FIG. 4

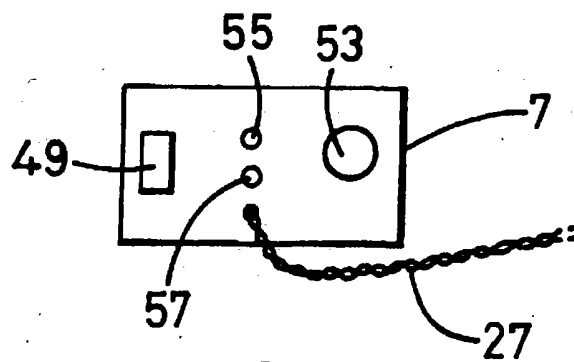
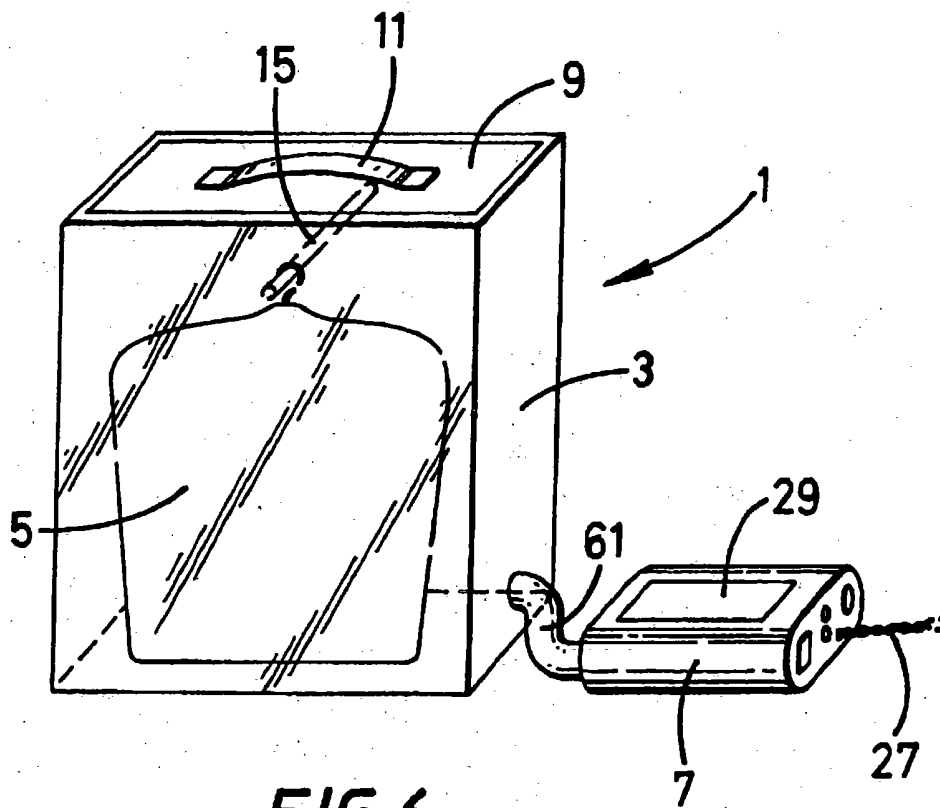


FIG. 5

**FIG. 6**

Steam Device for Clothes and th Like

This invention relates to a steam device for steaming clothes and the like such as towels.

Clothing and the like often need to be ironed damp and, unless one has a steam iron, this is difficult to achieve since if the clothes are re-wetted, they become too wet to iron. Therefore a steam device would assist in dealing with this problem.

Another advantage to steaming of clothes is that a fresher feel is created. Also in a steaming system, fragrances can be added to the steam so as to make the clothes and the like smell more fresh.

The present invention seeks to provide a steam device for clothes or the like which can be readily used, is simple to produce and cheap to manufacture.

According to the invention, a steam device for clothes or the like comprises a steam generating part, a clothes container part for receiving clothes and the like and means for connecting the steam generating part to the container part.

Preferably, the steam generating part comprises a rigid water tight container having an electrical heating device therein and means for connecting the heating element to a source of electrical supply.

The top surface of the watertight container may have a plurality of louvres therein for egress of steam, the clothes container being located on the said top surface and having an aperture adapted to receive the steam from the louvres.

The clothes container may be integral with the watertight container or may be a separate container detachable from the watertight container.

In an alternative form of the device, the watertight container may have a side opening in its upper region for the egress of steam and the clothes container may have a corresponding aperture at the lower part of the clothes container, the two apertures being placed in juxtaposition and connected together.

A thermostat may be provided to control the heating element to hold the temperature of the water in the watertight container at just below boiling point and an override switch may be provided to override the thermostat control and allow the water in the watertight container to exceed the boiling point and generate steam.

The override switch may be a push button the pressing of which overrides the thermostat and a timer may be incorporated to return control of the heating element to the thermostat after a predetermined time.

The invention will now be described in greater detail, by way of example, with reference to the drawings, in which:-

Figure 1 is a diagrammatic perspective view of one embodiment of the invention;

Figure 2 is a diagrammatic side sectional view of the steam generating part of the device of figure 1;

Figure 3 is a diagrammatic plan view of the steam generating part shown in section in figure 2 with the lid removed;

Figure 4 is a block diagram of a circuit suitable for operating the device of the invention;

Figure 5 is a diagrammatic end view of the steam generating part of figures 2 and 3 showing controls, and

Figure 6 is a diagrammatic perspective view of a second embodiment of the invention.

Referring firstly to figure 1, there is shown an embodiment of a steam device 1 for steaming clothes and the like. It comprises a clothes container part 3 for receiving clothes 5 to be steamed and a heat generating part 7 located beneath the clothes container part 3.

The clothes container part 3 comprises a rectangular container having sufficient dimensions for containing the clothes or the like 5. It is suitably provided with a lid 9 and a handle 11. The lower end of the container part 3 where it sits on the steam generating part 7 is provided with one or more apertures 13 for the ingress of steam from the steam generating part 7. This aperture may comprise an open base of the container part 3 or may consist of a plurality of louvres as shown.

The container part 3 may be suitably be provided with a hanging rail 15 on which clothes 5 can be hung, such as on a suitable clothes hanger. As shown, the container part may be constructed to be transparent, but an opaque container could be used.

The steam generating part 7 is more particularly shown in figures 2 and 3. This part 7 comprises a rigid container 17 having a watertight shaped dish part 19 for receiving water 21 with or without added fragrances or other treatment material. Located in one wall of the shaped dish part 19 is an immersion heater element 23, the connections of which pass through the wall of the dish part 19 and which are connected to a control box 25, the

arrangement of which will be described hereafter. The control box 25 is provided with a mains supply via a lead 27.

To enable filling of the dish part 19, the container 17 is provided with a removable lid 29 which is provided with apertures 31 through which steam from the dish part 19 can pass into the clothes container 3, and to this end, the apertures 31 are aligned with the aperture or apertures 13 in the base of the clothes container 3.

Referring now to figure 4, the circuitry housed in the control box 25 is shown in the form of a block diagram. In this figure, the heating element 23 is indicated by the block 41 and the mains lead 27 is indicated at 43. Also provided outside the control box 25 is a heat temperature sensor 45 which controls the water temperature through a thermostat device 47. It will be appreciated that while the sensor 45 and control 47 have been shown separately, they will normally form a single unit.

For controlling the supply of electricity to the immersion heater element 41, a mains cut off switch 49 is used. This controls the supply to all the components in the control box 25. The thermostat device 47 is bypassed by a timer control 51 which permits full power to be provided to the heater element irrespective of the temperature sensed by the sensor 45 but for a limited predetermined time for a purpose to be described hereafter. The timer control 51 is preferably started by a push button, here indicated at 53.

Various indicators, such as LED's (not shown in this figure) may be provided for indicating the status of the device and the heating element is preferably provided with a cut out which operates when the dish part 19 becomes low or out of water.

Figure 5 shows one end of the steam generating part 7 on which the operating controls are located. To this end, there is provided the on/off switch

49, the timer operating push button 53 and two LED's 55 and 57. The LED 55 is illuminated when the electricity supply is turned on while the LED 57 indicates when the water in the dish part 19 has reached a predetermined temperature.

The operation of the device will now be considered:-

Taking the unit as it appears in figure 1, the clothes container part 3 is removed from the top of the steam generating part 7 and the dish part 19 is filled with water through the opening provided by removal of the lid 29.. Once filling has been completed, the clothes container part 3 is replaced on the top of the container 17 of the steam generating part 7 and the unit is plugged into the mains supply using the lead 27. The device is then switched on by means of the switch 49 and the water 21 in the dish part 19 will be heated by the immersion heater 41 under control of the thermostat 47. At this time the LED 55 will be illuminated.

When the water has reached a temperature close to boiling point, say 95° C, the LED 57 will become illuminated to indicate that the device is ready for use. Until further action is taken, the thermostat 47 will maintain the water at this temperature.

The clothes to be steam are now placed in the container part 3 and the lid 9 closed. The push button 53 is then pressed to bypass the thermostat and feed full power to the immersion heater 41 so that the water in the dish part 19 will be heated to above boiling point so as to produce steam which will pass into the container part 3 and steam the clothes and the like therein. The length of time that full power is supplied to the heating element 41, for example, 90 seconds, is controlled by the timer 51. This time, in the present embodiment, is preset during manufacture, but a more sophisticated version of the device could be provided with a manually settable timer.

Once the steam cycle has been completed, the clothes can be removed from the clothes container part and further clothes may be steamed by again pressing the push button 53. It will be appreciated that while the device is left switched on, the water temperature will be maintained at a steady temperature just below boiling point for further use.

Figure 6 shows an alternative embodiment of the invention in which the clothes container part 3 is a separate unit from the steam generating part 7. Thus in this case, the steam generating part 7 is connected to the clothes container part 3 by means of a short length of piping 61.

It will be understood that a number of modifications of or additions to may be made to the above described embodiments. For example, while a generally rigid clothes container 3 has been shown, this could be made to fold up for storage. Other indicators could be provided on the control box 25 such as a water level indicator and an audible or visual indication when the timer has completed a cycle. A thermostat could be used instead of a timer to detect the presence of a predetermined amount of steam in the clothes container.

While the steam generating part 7 has been shown with a removable lid for filling purposes, the dish part 19 could be filled through the apertures 31 so that the lid portion could be integral with the container 17.

Where a fragrance is required to be added, this could be added directly to the water or it could be arranged for the generated steam to pass through a scented filter.

While the two parts 3 and 7 have been indicated in both embodiments as separable, it is possible to provide a non separable device in which the generating part 7 forms the base of the clothes container 3.

CLAIMS:-

1. A steam device for clothes or the like comprising a steam generating part, a clothes container part for receiving clothes and the like and means for connecting the steam generating part to the container part.
2. A device as claimed in claim 1, wherein the steam generating part comprises a rigid water tight container having an electrical heating device therein and means for connecting the heating element to a source of electrical supply.
3. A device as claimed in claim 2, wherein the top surface of the watertight container has a plurality of louvres therein for egress of steam, the clothes container being located on the said top surface and having an aperture adapted to receive the steam from the louvres.
4. A device as claimed in claim 3, wherein the clothes container is integral with the watertight container.
5. A device as claimed in claim 3, wherein the clothes container is a separate container detachable from the watertight container.
6. A device as claimed in claim 2, wherein the watertight container has a side opening in its upper region for the egress of steam and the clothes container has a corresponding aperture at the lower part of the clothes container, the two apertures being placed in juxtaposition and connected together.
7. A device as claimed in any one of claims 2 to 6, wherein a thermostat is provided to control the heating element to hold the temperature of the water in the watertight container at just below boiling point and an override switch is provided to override the thermostat control and allow the water in the watertight container to exceed the boiling point and generate steam.

8. A device as claimed in claim 7, wherein the override switch is a push button the pressing of which overrides the thermostat and a timer is incorporated to return control of the heating element to the thermostat after a pre-determined time.

9. A device as claimed in any preceding claim, wherein the clothes container is foldable for storage.

10. A device as claimed in any preceding claim, wherein the clothes container is provided with one or more supports to carry hangers on which the clothes to be steamed can be placed.

11. A steam device for clothes or the like substantially as described herein with reference to the drawings.



Application N : GB 990065.5
Claims searched: 1-11

Examiner: R L Williams
Date of search: 28 April 1999

Patents Act 1977 Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK CI (Ed.Q): D1A (A17)

Int CI (Ed.6): D06F 73/00, 73/02, 87/00

Other: EPODOC, WPI, JAPIO

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X	EP 0,816,552 A2 Whirlpool Corporation	1-4, 6-8 and 10
X	EP 0,324,589 A1 J S F Holdings	1-4, 6-8 and 10
X	WO 97/47798 A1 J De Oliveira	1-10
X	US 5,730,006 C T Conley	1-4, 6-8 and 10
X	US 5,305,484 J S Fitzpatrick et al	1-4, 6-8 and 10
X	US 5,094,020 E C Wingfield et al	1-4, 6-8 and 10
X	US 3,594,917 G L Montgomery	1-10

X Document indicating lack of novelty or inventive step
Y Document indicating lack of inventive step if combined with one or more other documents of same category.

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A Document indicating technological background and/or state of the art.
P Document published on or after the declared priority date but before the filing date of this invention.
E Patent document published on or after, but with priority date earlier than, the filing date of this application.

Amendments to the claims have been filed as follows

1. A steam device for clothes or the like comprising a self standing container for receiving clothes or the like, a separate steam generator and piping connecting the steam generator and the container.
2. A device as claimed in claim 1, wherein the steam generator comprises a rigid water tight container having an electrical heating device therein, a steam outlet and means for connecting the heating device to a source of electrical supply.
3. A device as claimed in claim 2, wherein the container comprises a container for receiving water and a fragrance.
4. A device as claimed in claim 2, wherein the container comprises a container for receiving water and a scented filter is provided between the container and the steam outlet.
5. A device as claimed in any one of claims 2 to 6, wherein a thermostat is provided to control the heating element to hold the temperature of the water in the watertight container at just below boiling point and an override switch is provided to override the thermostat control and allow the water in the watertight container to exceed the boiling point and generate steam.
6. A device as claimed in claim 5, wherein the override switch is a push button the pressing of which overrides the thermostat and a timer is incorporated to return control of the heating element to the thermostat after a predetermined time.

7. A device as claimed in any preceding claim, wherein the clothes container is foldable for storage.

8. A device as claimed in any preceding claim, wherein the clothes container is provided with one or more supports to carry hangers on which the clothes to be steamed can be placed.

9. A steam device for clothes or the like substantially as described herein with reference to the drawings.